

Regional Recycling Efforts



August 13, 2013

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**INVEST IN
SUSTAINABLE
GROWTH**



**CREATE
JOBS**



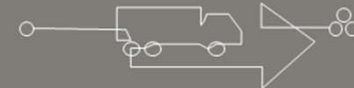
**REDUCE
DISPOSAL**



**CAPTURE
VALUE**



**REALIZED
POTENTIAL**

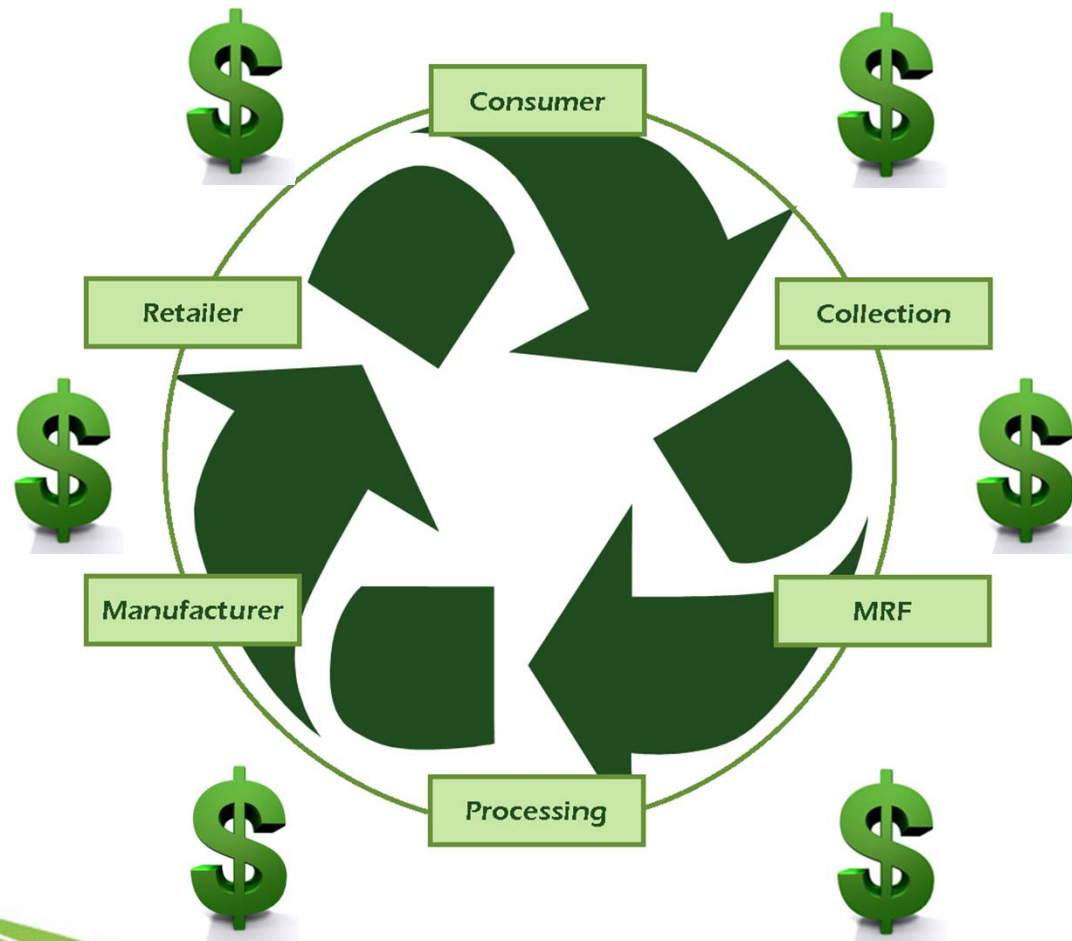


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What is recycling?



What is recycling?



SERDC research

A summary of key Southeastern manufacturers who look to recycled content feedstock to build their consumer level goods.



Regional Collaboration = Increased Access to Markets

Summary of Region Wide Findings:

- 206 manufacturers
- 47,525 employees
- \$29.4 Billion sales revenue



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State	Manufacturers	Jobs	Annual Sales
Alabama	26	10,700+	\$6.6 billion
Arkansas	5	1,200+	\$0.4 billion
Florida	15	2,600+	\$1.5 billion
Georgia	31	7,000+	\$4.5 billion
Kentucky	17	4,300+	\$3.8 billion
Louisiana	10	2,900+	\$1.1 billion
Mississippi	3	525+	\$1.3 billion
North Carolina	30	2,800+	\$1.1 billion
South Carolina	24	5,300+	\$5.3 billion
Tennessee	30	6,500+	\$4.3 billion
Virginia	15	3,700+	\$3.6 billion
Region Totals	More than 206	Greater than 47,525	Over \$29.4 billion



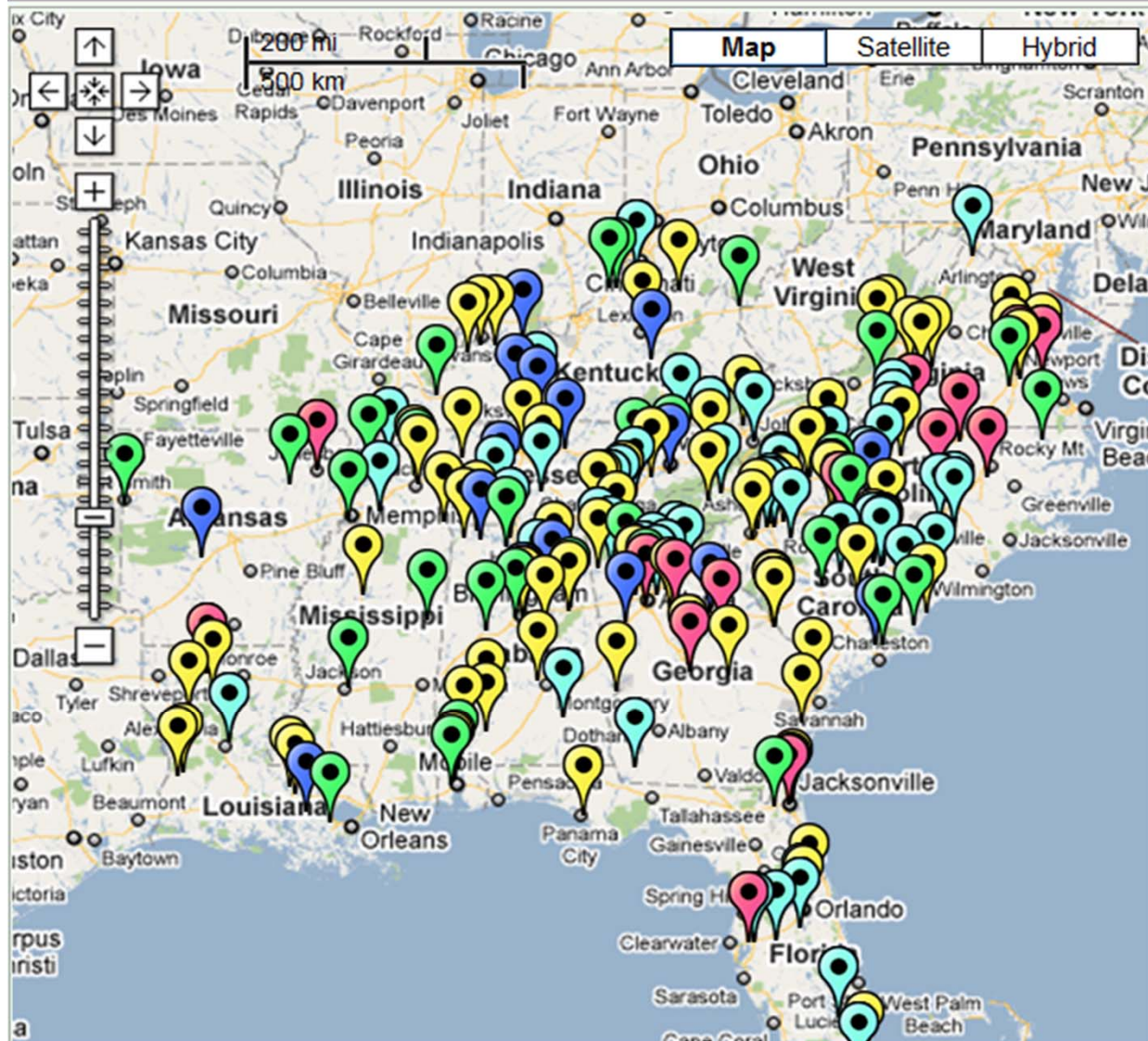
Mapping Demand for Recycled Content Material

Southeastern manufacturers rely on recycled glass, plastic, metal, and paper to make new consumer goods.

☐ Hide Map Controls

Print Map

Refresh Map



Recycled Commodity Type

This map highlights key manufacturers who look to recycled materials to make their products.

- ☒ Select All ☒ Aluminum ☒ Glass
☒ Paper ☒ Plastic ☒ Steel

Show

Local investment in recycling fuels regional manufacturing. To search by company name, click the + signs below.

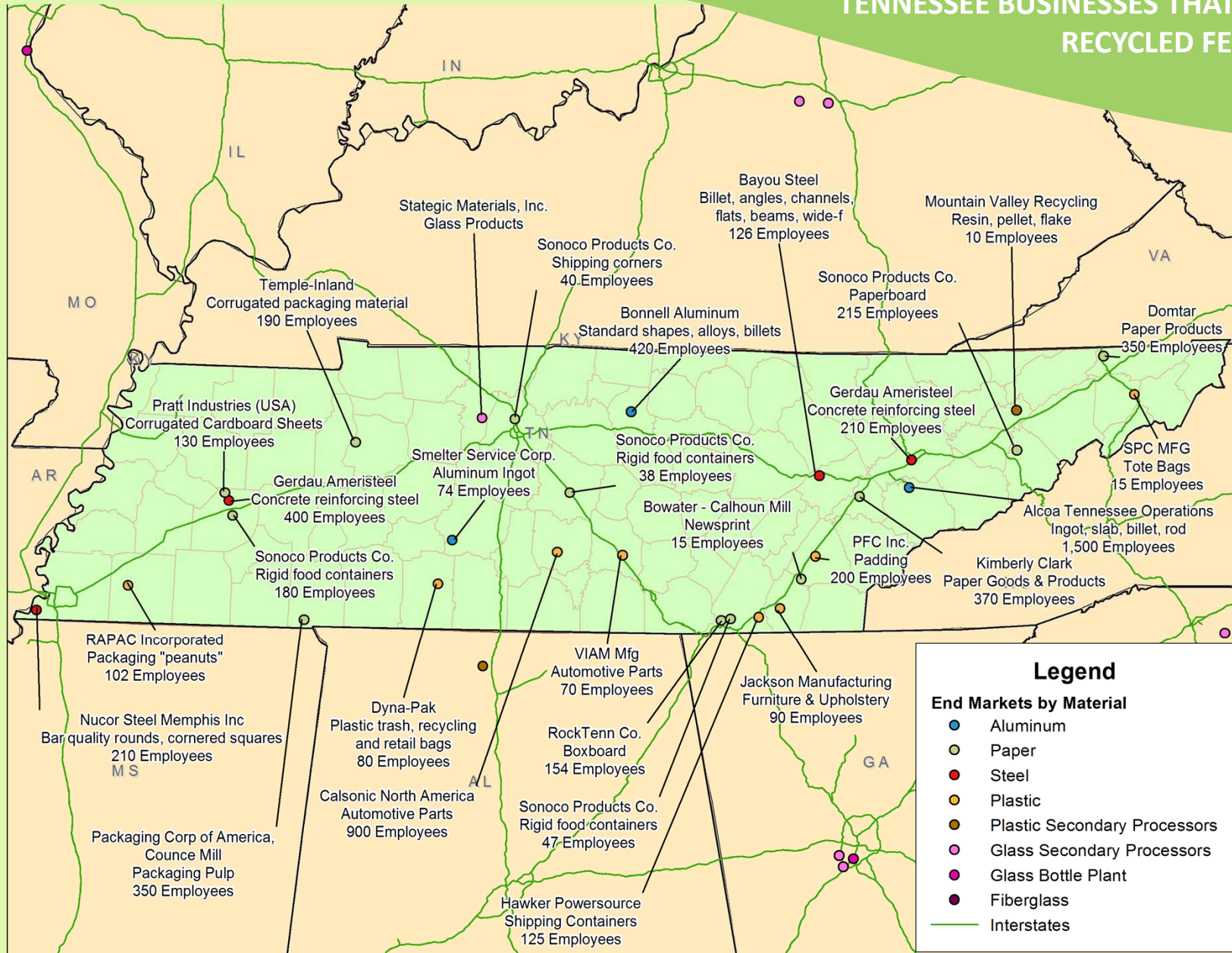
- ☒ Plastic
☒ Steel
☒ Aluminum
☒ Glass
☒ Paper

Tennessee

- Recent report: Characterization of Tennessee's Recycling Economy
- Symposium August 15 & 16, 2013
- Workshop series 2012



LOCAL END MARKETS TENNESSEE BUSINESSES THAT RELY ON RECYCLED FEEDSTOCK



URBAN w/ CURBSIDE & DROP-OFF



POPULATION
601,122

HOUSEHOLDS
242,474

SERVICE

curbside: City households w/ access to carts: 140,000
service once monthly
95 gallon roll-carts

drop-off: 13 drop-off sites and 3 convenience centers



ACCEPTED

All paper & boxes (including cartons)
All plastic bottles and containers (including tubs, lids, and plastic trays)
All metal and aluminum cans
Glass bottles and jars can be recycled at drop-off sites and convenience centers only.

FACILITY

Waste Management, Inc. Recycling
DISTANCE TO RECYCLING FACILITY: Nashville, in-town

COLLECTED

tons collected curb & drop-off

20,069

166

pounds per household

AVAILABLE

tons of focus materials disposed

110,000

MOVING FORWARD

Increase access and collection frequency

50% of available focus material from residential sector means 55,000 tons of added diversion



End User

ALCOA TN OPERATIONS

ALCOA, TN

EMPLOYEES **1500**



TYPE Aluminum cans

AMOUNT At least 175,000 Tons/year

Distance range for sourcing supply:
Domestic & International



Purchase price:

Market price, currently \$.88/lb*

Product manufactured:

Rigid Container Sheet (RCS). Used to make new aluminum cans.

Product value:

Price range for RCS is in the \$1.50 to \$3.00/lb range (FOB sellers dock)*

COMMENTS

The Alcoa, TN plant is the largest aluminum can sheet mill in the world. This mill produces ~90% recycled content rigid container sheet. Alcoa closed their East Tennessee smelter in 2009. They no longer make aluminum from ore since the smelter shut down and currently alternatively use recycled feedstock. Alcoa sources material both domestically and internationally to meet mill demand.

It is estimated that 2.3 billion cans were used in the state of TN in 2008. At a count of about 34 cans per pound it works out to 67.6 million lbs. of aluminum cans consumed and available for recycling per year in TN, or 33,800 tons.

**Annual municipal recovery
in TN of aluminum cans:**

2,570
TONS

End User

ROCKTENN CORRUGATED SHEET PLANT

CHATTANOOGA, TN

EMPLOYEES **154**



TYPE OCC, DLK

AMOUNT 146,000 Tons/year

Distance range for sourcing supply: Supplied by 7 RockTenn mills producing linerboard and corrugating medium across Southeast



Purchase price:

Market price, currently about \$500/ton (corrugating medium), and \$750/ton (linerboard)*

Product manufactured:

Corrugated Cardboard Sheet
70 to 80 million square feet produced per month.

Product value:

\$0.1 to \$0.2/sq ft (about \$2,000/ton)*

COMMENTS

RockTenn is one of North America's leading producers of corrugated and consumer packaging and recycling solutions. Based in Norcross, Ga., they employ approximately 26,000 people and operate more than 240 facilities in the United States, Canada, Mexico, Chile, Argentina and China.

RockTenn is vertically integrated and has many assets located in TN, including MRF's, mills, sheet plants and converting facilities. The Chattanooga corrugated sheet plant produced a record 93 million sq feet of corrugated sheet in Oct 2012.

Annual municipal recovery
in TN of OCC:

Est. **70,000**
TONS

End User

VICAM (VIAM MANUFACTURING)

MANCHESTER, TN

EMPLOYEES 70



TYPE PET

AMOUNT Capacity of 5,475 Tons/year

Distance range for sourcing supply:

AL, SC, Japan



Purchase price:

clean, clear PET bottle resin (flake or pellet)
market price, currently \$.70 - \$.89/lb*

Product manufactured:

PET Staple Fiber

Product value:

Current market value range = \$2 to \$3/kg, or
\$0.90 to \$1.36/lb.

**Annual municipal recovery
in TN of PET Bottles:**

Est. **3800**
TONS

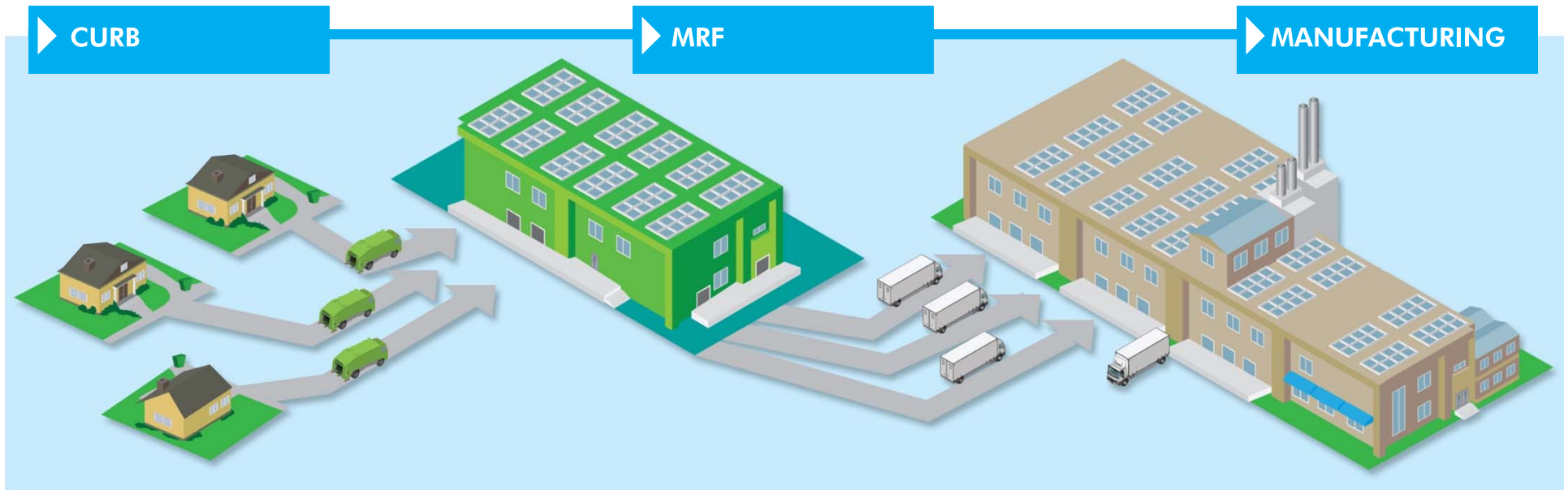
COMMENTS

The company is a newly formed subsidiary of leading nonwoven materials producer Japan Vilene Company (JVC) managed by VIAM Manufacturing and utilize technology developed by Oyama Chemical. VICAM invested \$32 million to build a facility for the production of a polyester-based carpet fiber and opened in March 2012. This investment will produce 70 new jobs at full capacity.

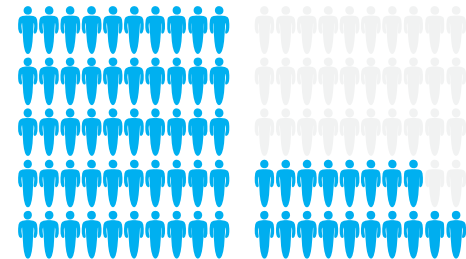
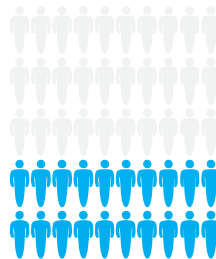
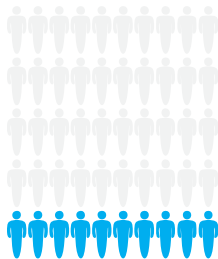
VICAM's new Manchester facility produces polyethylene terephthalate (PET) staple carpet fiber by recycling PET clear bottles, using Oyama Chemical's fiber technology. The carpet fiber will then be used in headliner, seat backs and door panels in the automotive industry.

The plant is located on a 12-acre site that houses a 44,000 square foot facility with the capability for future expansion of 120,000 square feet. Future expansion plans include supplying PET staple carpet fiber to VIAM Manufacturing in their manufacture of automotive floor mats. As a producer of high quality, custom design floor, trunk and cargo mats, VIAM is a supplier for many of the big automotive companies, including Nissan North America, Inc.

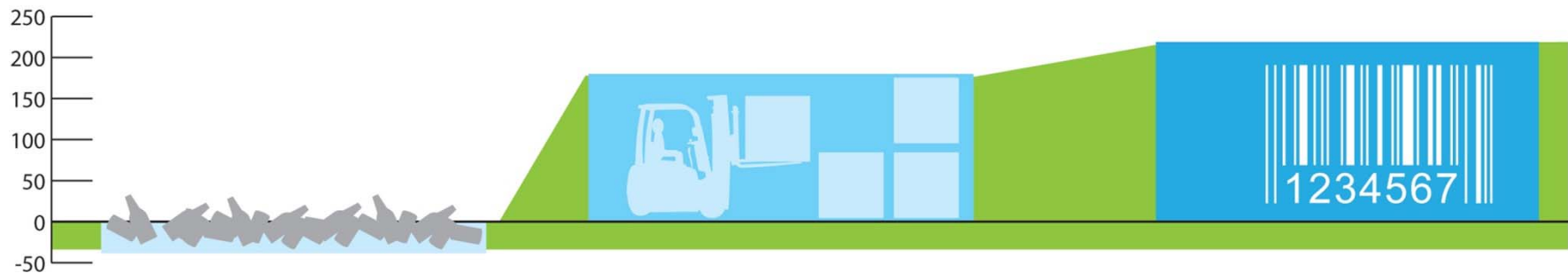
Lifecycle of Material in Tennessee's Recycling Economy



JOB



MATERIAL COST/VALUE



Tons of Recyclable Collected per Household

City	Average Pounds Collected for Recycling per Household per Year
Oklahoma City, OK	106
Dallas, TX	285
Fort Worth, Texas	335
Atlanta, GA	358
El Paso, TX	412
Phoenix, AZ	542
Austin, TX	590
San Jose, CA	875

Factors Affected Tons Recyclables Collected per Household

City	HH served	Container Size?	PAYT?	Lbs/hh/yr
Oklahoma City, OK*	172,000	18-gal bins	No	106
Dallas, TX	250,000	90-100 gal	No	285
Fort Worth, TX	202,000	60 – 70 gal	Yes	335
Atlanta, GA	95,000	90-100 gal	No	358
El Paso, TX	168,000	90 – 100 gal	No	412
Phoenix, AZ	390,000	90-100 gal	No	542
Austin, TX	189,000	90-100 gal	Yes	590
San Jose, CA	212,000	90 – 100 gal	Yes	875
* Dual stream				

Possible Steps to Take

- More frequent collection
- Mandate waste metering (PAYT)
- Increase outreach
- Disposal restrictions
- Required participation
 - Select industries (ABC permits)
 - General

SERDC Resources

www.serdc.org/regionalresources

- Economic Reports
- State Recycling Resources
- Market Directories
- Waste Exchanges
- SERDC maps and publications

The logo features the text "SERDC.org" in a bold, dark green font. It is positioned on the left side of a green graphic that consists of several overlapping, wavy, horizontal bands of varying shades of green, creating a layered, landscape-like effect.

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2013 TENNESSEE SYMPOSIUM

A TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION SYMPOSIUM



O P P O R T U N I T I E S A B O U N D

NASHVILLE, TENNESSEE
AUGUST 15-16, 2013

SERDC
Southeast Recycling Development Council

TDEC
TENNESSEE DEPARTMENT OF
ENVIRONMENT AND CONSERVATION

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